

**SEGA<sup>®</sup>**

**SCRAMBLE  
SPIRITS™**

**OWNER'S MANUAL**

**SEGA ENTERPRISES, LTD.**



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## SPECIFICATIONS

INSTALLATION SPACE	: 30 in. W × 37 in. D
HEIGHT	: 73 in.
POWER	: 201 W
C.R.T.	: 26 MONITOR
WEIGHT	: 140 kg (307 lbs.)

### NOTE

- Descriptions herein contained may be subject to improvement changes without notice.

## INTRODUCTION TO THE OWNER'S MANUAL

SEGA ENTERPRISES, LTD., supported by its high electronic technology of LSIs, micro-processors, etc. and a wealth of experience, has for more than 30 years been supplying various innovative and popular game machines to the world market. This OWNER'S manual is intended to provide detailed comments together with all the necessary information covering the operation in general of electronic assemblies, electromechanicals, servicing control, spare parts, etc. as regards the SCRAMBLE SPIRITS, a new SEGA product. The manual is intended for those who have knowledge of electricity and technical expertise especially in ICs, CRTs, microprocessors, etc. Carefully read so as to acquire sufficient knowledge before working on the machine. Should there be a malfunction, non-technical personnel should under no circumstances touch the interior system.

## 1. HANDLING PRECAUTIONS

When installing or inspecting, be very careful of the following points and pay attention to ensure that the player can enjoy the game safely.

- Be sure to turn the power off before working on the machine.
- To insert or pull out the plug quickly is dangerous.
- It is necessary to make sure that the power cord or the grounding wire is not exposed on the road, etc. in a manner so as to be dangerous. Make sure that grounding connections are made safely at the position where so specified.
- Do not use any fuse that does not meet the specified rating.
- Make complete connections for the IC board and other connectors. Insufficient insertion is very dangerous.
- For protection of the disk, please remove from machine prior to relocation.

Also, for the IC board circuit inspections, only the logic tone is allowed. The use of a tester is not permitted, so be careful in this regard. After confirming that there are no irregularities, turn the power ON.

## 2. PREVENTION OF COUNTERFEITING AND CONVERSION

### LABELLING

To prevent counterfeits and conversions, the following labels are put on all the SEGA products. When handling such goods, be sure to confirm the labels. They are used to prevent illegal acts such as the unauthorized copying of the products and the printed circuit boards thereof or carrying on business by manufacturing similar merchandise or by converting, selling or using such products or printed circuit boards.

#### ORIGINAL SEAL

The following seal is put on the machines manufactured by SEGA.



#### LICENSE SEAL

The following seal is put on the kits, such as the printed circuit boards, of SEGA products.



### COPYRIGHT NOTICE

This SEGA product has the copyright notice as follows:

© SEGA 1988

This signifies that this work was disclosed in 1988 and is the property of SEGA ENTERPRISES, LTD.

### **3. PRECAUTIONS CONCERNING THE PLACE OF INSTALLATION**

The SCRAMBLE SPIRITS is an indoor game machine. Absolutely do not install it outside. Even indoors, avoid installing in places mentioned below so as to ensure proper usage:

- Places subject to rain or water leakage, or condensation due to humidity.
- In the proximity of an indoor swimming pool and/or shower.
- Places subject to direct sunlight.
- Places subject to heat sources from heating units, etc., or hot air.
- Vicinity of highly inflammable/volatile chemicals or hazardous matter.
- Sloped surfaces.
- Vicinity of anti-disaster facilities such as fire exits and fire extinguishers.
- Places subject to any type of violent impact.
- Dusty places.

## 4. DISK INSTALLATION

### IMPORTANT

#### INSTALLATION INSTRUCTIONS

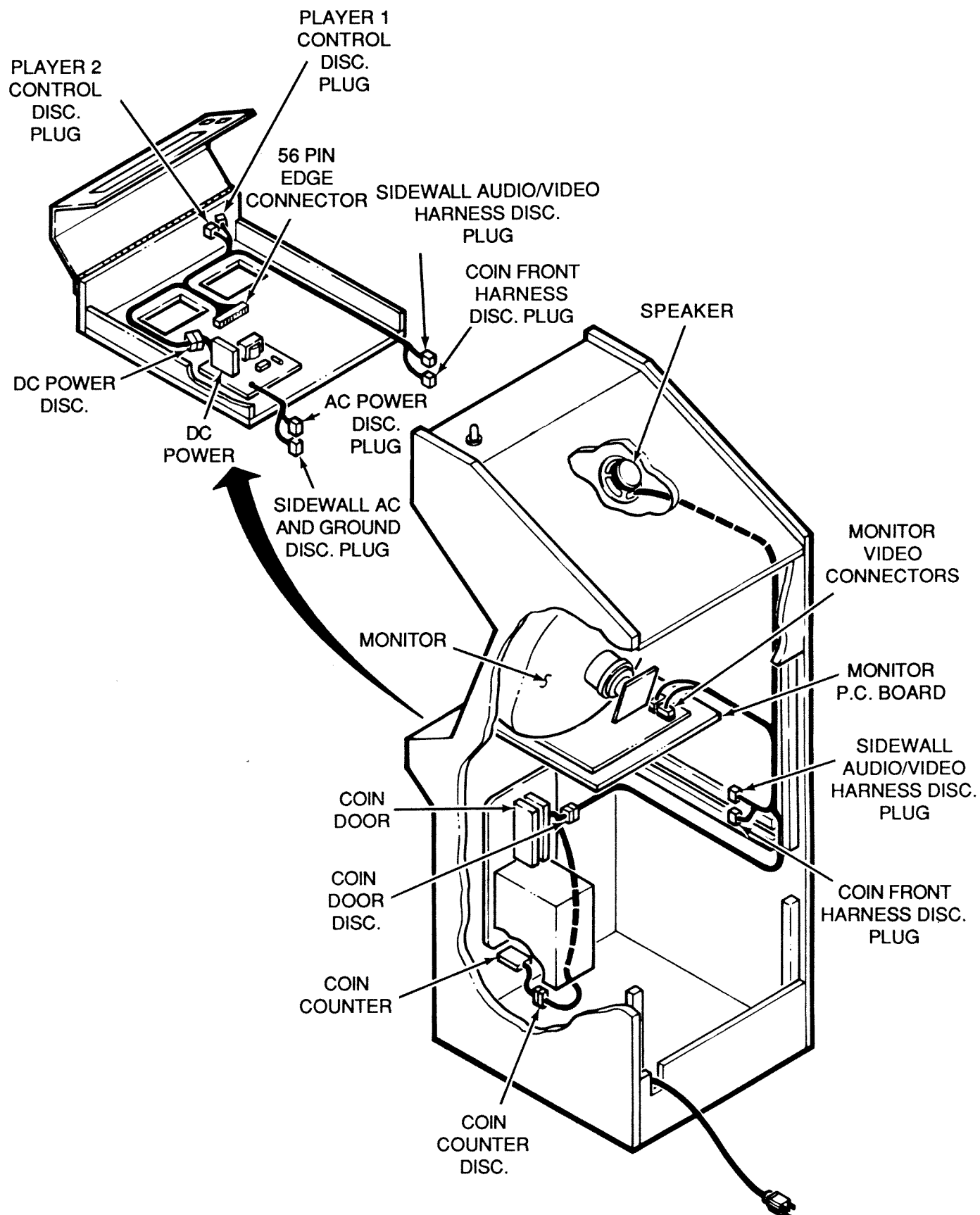
SCRAMBLE SPIRITS contains a revolutionary new memory system for video games. This memory system is a Floppy Disk System which is housed in the RF Cage. This system allows Sega to give you more memory at a cost effective price.

To insure that no damage occurs to this delicate system during transit, we have packaged the Floppy Disk separately which must be installed upon receipt of the game. Please follow the listed instruction for the installation of the disk.

#### DISK INSTALLATION

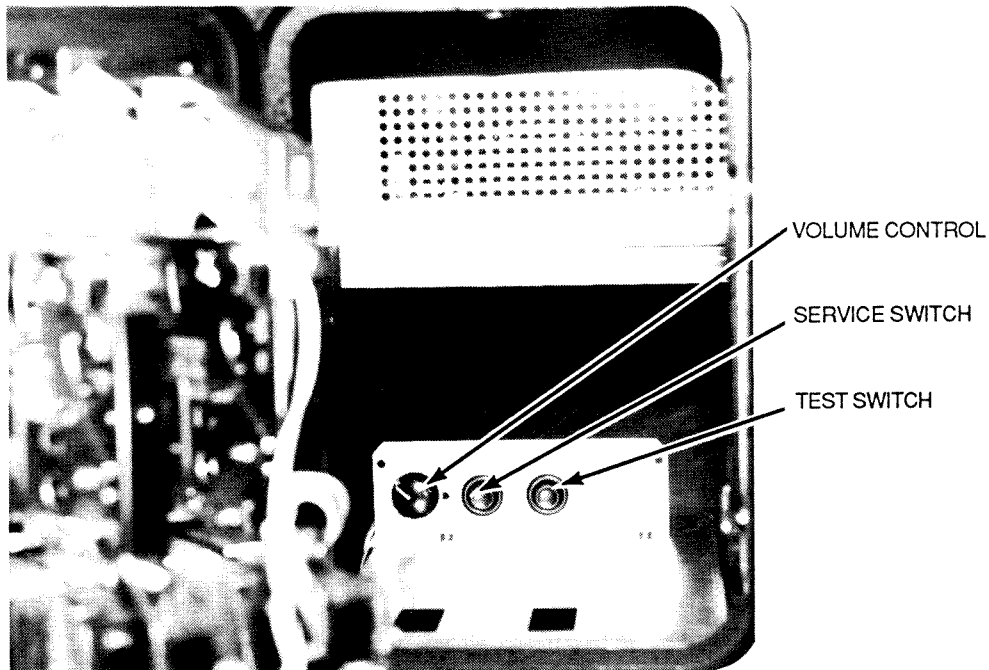
1. Open Coin Door and remove Cash Box.
2. Open Cash Box and remove Floppy Disk. (NOTE: It is housed in a plastic protection cover.)
3. Reach thru the Coin Door opening and unlatch the two spring latches which hold the front assembly securely to the rear assembly of the game. These latches are located on the right, inside of the front assembly.
4. Once the two latches are unlocked, pull on the control panel assembly out for access to PCB RF cage.
5. Remove the cover of the PCB RF Cage by removing the four sheet metal screws.
6. Remove the two screws located on the left side of the wooden base of the PCB Assembly.
7. Lift the right side of the PCB Assembly. This will allow access to the disk drive, which is located underneath the PCB.
8. Remove the disk from the plastic protection case and install it into the disk drive label side up with the metal cover protection slide installed first. The disk should slide in and snap down to indicate that it is securely inserted.
9. Replace the two screws that you removed in Step #7 to secure the Wooden PCB base to the RF Cage.
10. Replace the lid of the RF Cage using the four sheet metal screws that were removed from the assembly in Step #6.
11. Close the control panel and latch.
12. Apply power to the game and verify proper operation. This completes the Drive Assembly.
13. For protection of the disk, please remove it from the machine prior to relocation.

## 5. NAME OF PARTS



## 6. ADJUSTMENT OF THE SERVICE SWITCH

The layout as shown below can be viewed by opening the coin chute door.



### OPERATING INSTRUCTIONS

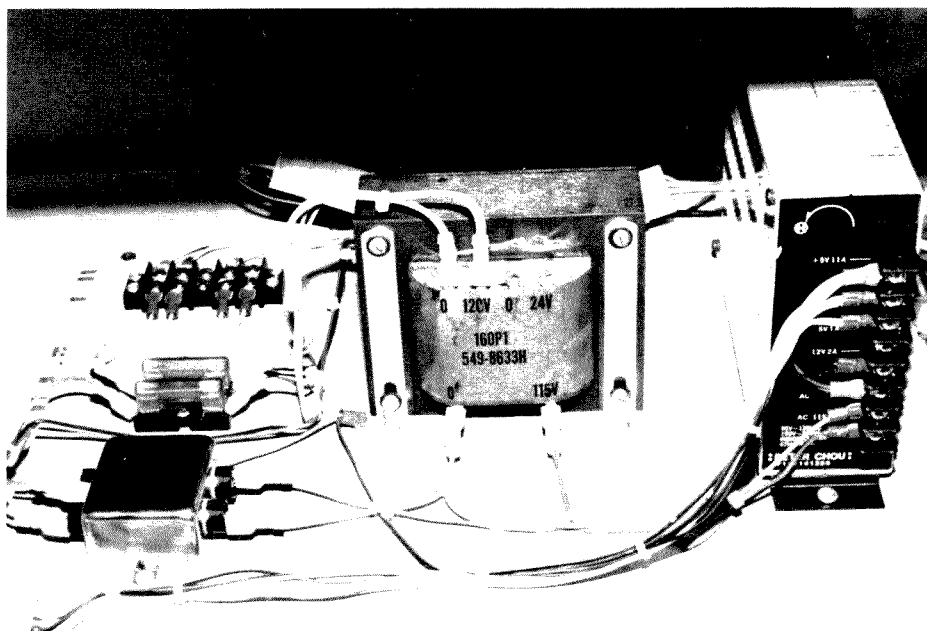
SERVICE SWITCH ..... Used for the purpose of servicing and increasing the credits without registering on the meter (this allows you to check the game).

TEST SWITCH ..... For operating this switch, see SELF-TESTING.

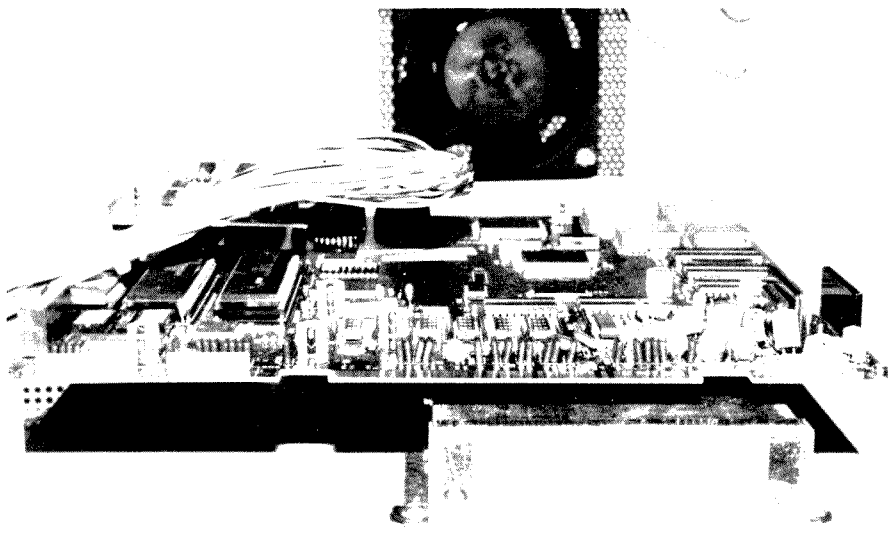
VOLUME CONTROL ..... Potentiometer Adjustment

## 7. SERVICING THE POWER SUPPLY UNIT AND FUSE

### Power Supply Assembly

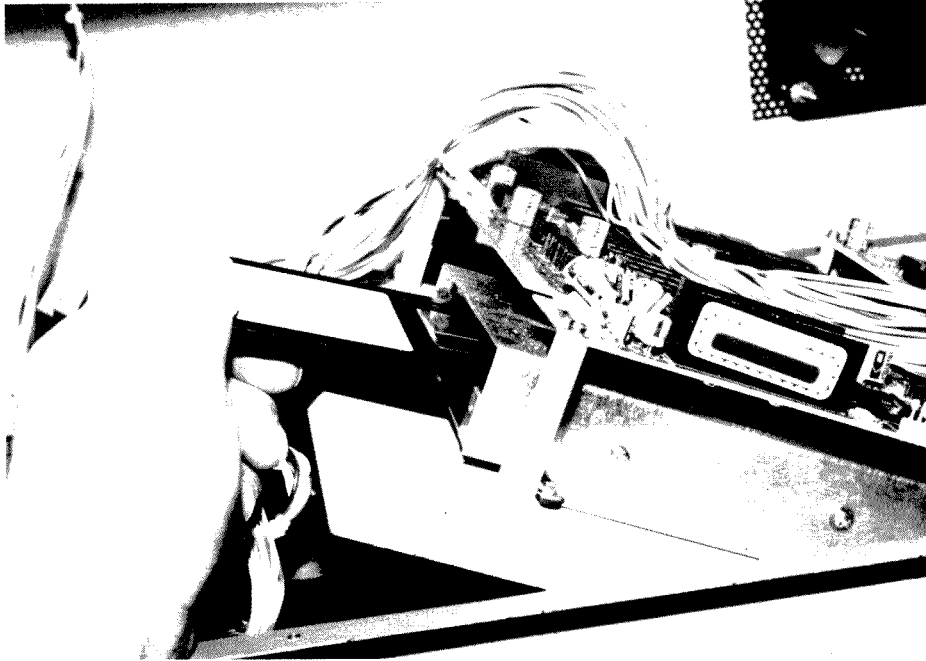


## 8. P.C. BOARD ASSEMBLY



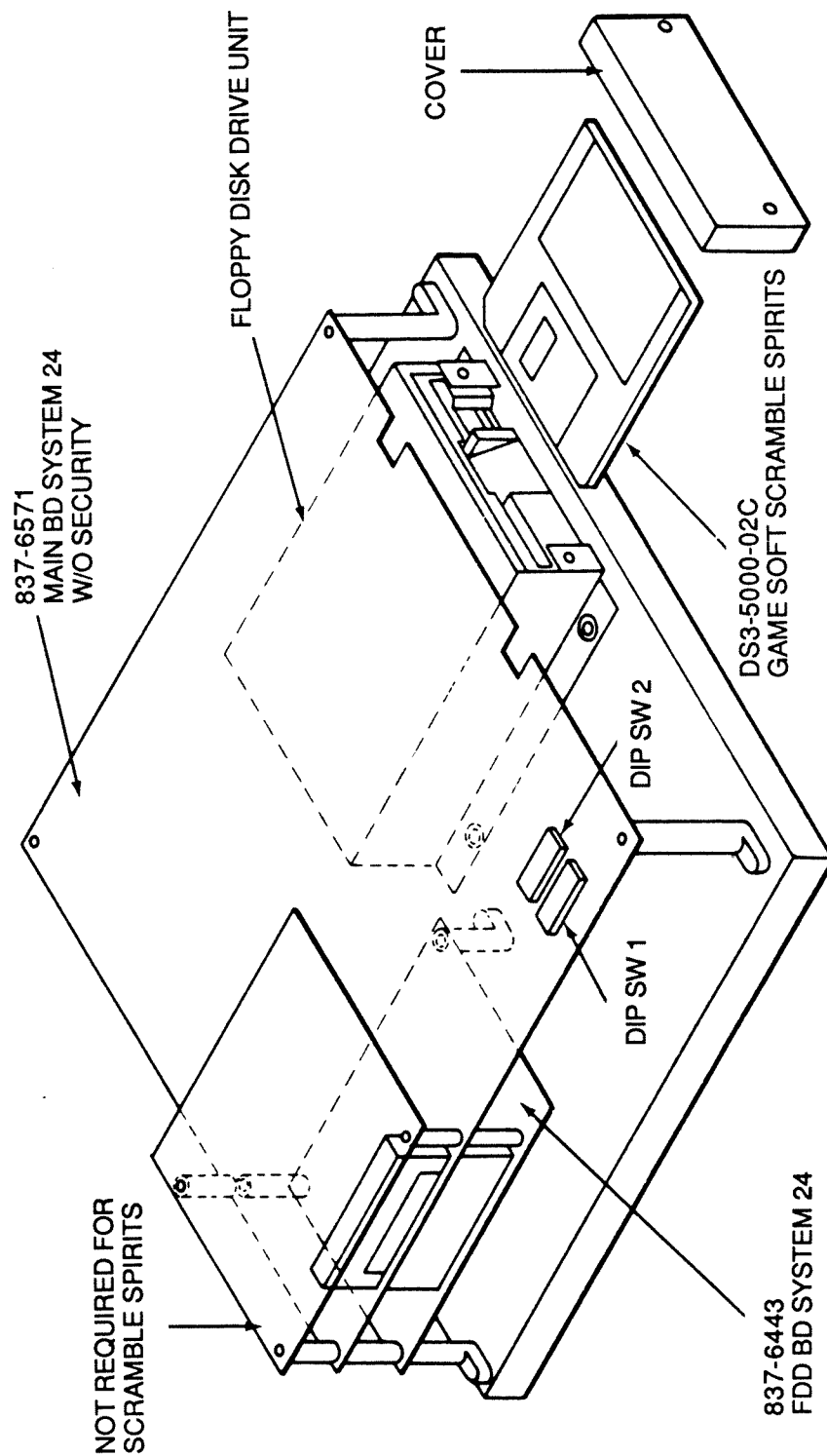


## 9. SERVICING THE FLOPPY DISK

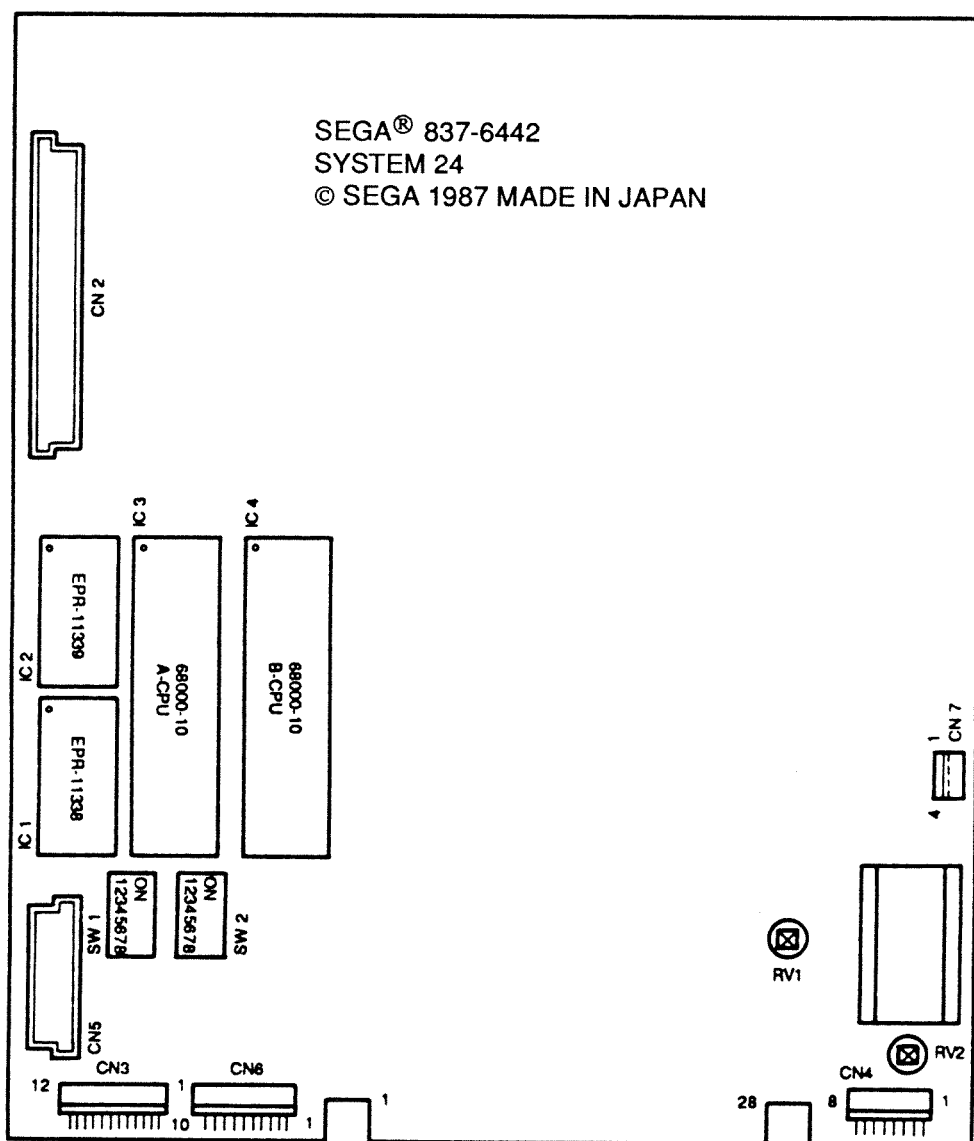


REMOVE THE LID of the SHIELD CASE. Remove the sheet metal and pull out the game board unit in a manner so that both ends of it will meet the shield case. Open the FDD (Floppy Disk Drive) LID by taking off the 2 (M3 x 8) SCREWS when replacing the FLOPPY DISK.

## 10. DRAWING OF PC ASSEMBLY



## 11. PC BOARD COMPONENT LOCATIONS

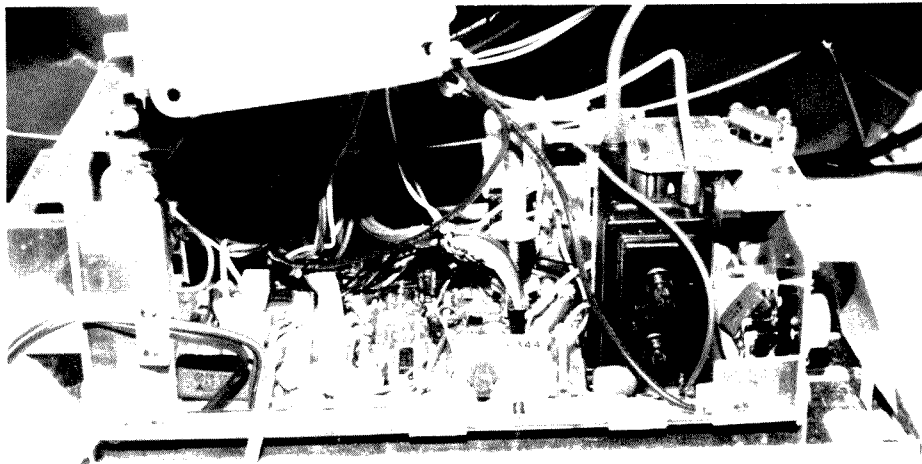


### MAIN BD SY 24

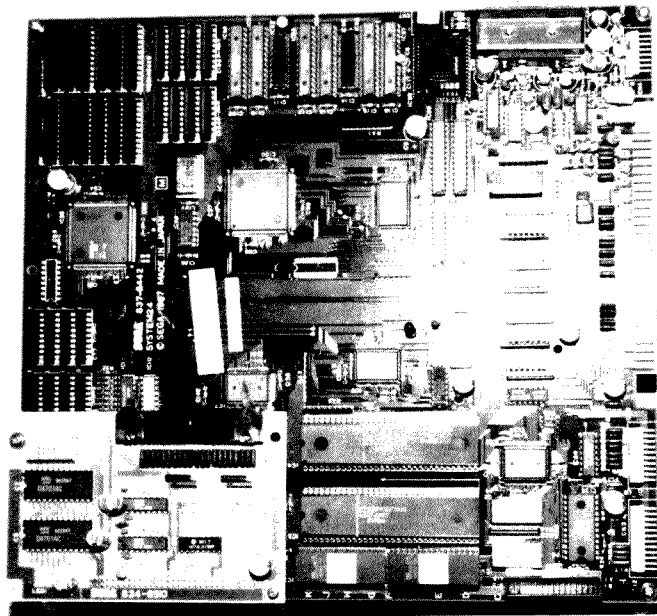
- IC 1 EPR-11338 (IC MB27C1000-15)
- IC 2 EPR-11339 (IC MB27C1000-15) FOR SYSTEM
- IC 3 IC 6800
- IC 4 IC SECURITY CPU 68000 OR IC 68000 FOR GAME PROGRAM
- SW 1 DIP SW
- SW 2 DIP SW
- CN 3 DATA COMMUNICATION CONNECTOR
- CN 6 RESERVE POWER CONNECTOR
- CN 7 INPUT (SOUND) CONNECTOR
- CN 8 HEADPHONE OUTPUT CONNECTOR
- RV 1 MAIN SOUND VOLUME
- RV 2 HEADPHONE SOUND VOLUME

## 12. MONITOR ADJUSTMENT AND GAME BOARD SERVICING

### Monitor Adjustment



### Scramble Spirits Printed Circuit Board



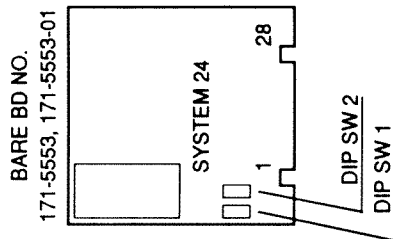
SCRAMBLE SPIRITS (834-6570-02)

## DIP SW #1

OPTION		1	2	3	4	5	6	7	8
1 COIN	1 CREDIT	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN	2 CREDITS	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN	3 CREDITS	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
1 COIN	4 CREDITS	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
1 COIN	5 CREDITS	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
1 COIN	6 CREDITS	ON	ON	OFF	ON	OFF	ON	OFF	OFF
2 COINS	1 CREDIT	OFF	ON	ON	OFF	OFF	ON	ON	OFF
3 COINS	1 CREDIT	ON	ON	ON	OFF	ON	ON	ON	OFF
4 COINS	1 CREDIT	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
2 COINS	3 CREDITS	ON	OFF	OFF	ON	ON	OFF	OFF	ON
2 COINS	1 CREDIT	OFF	ON	OFF	ON	OFF	ON	OFF	ON
4 COINS	2 CREDITS								
5 COINS	3 CREDITS								
6 COINS	4 CREDITS								
2 COINS	1 CREDIT	ON	ON	OFF	ON	ON	ON	OFF	ON
4 COINS	2 CREDITS								
5 COINS	3 CREDITS								
6 COINS	4 CREDITS								
1 COIN	1 CREDIT	OFF	OFF	ON	ON	OFF	ON	ON	ON
2 COINS	2 CREDITS								
3 COINS	3 CREDITS	ON	OFF	ON	ON	ON	OFF	ON	ON
4 COINS	4 CREDITS								
5 COINS	6 CREDITS								
1 COIN	1 CREDIT								
2 COINS	2 CREDITS	ON	OFF	ON	ON	ON	OFF	ON	ON
3 COINS	3 CREDITS								
4 COINS	5 CREDITS								
1 COIN	1 CREDIT	OFF	ON	ON	ON	OFF	ON	ON	ON
2 COINS	3 CREDITS								
FREE PLAY		ON	ON	ON	ON	ON	ON	ON	ON
		COIN SW. #1				COIN SW. #2			

## DIP SW #2

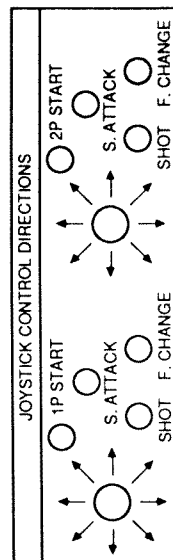
OPTION		1	2	3	4	5	6	7	8
DISPLAY FLIP		OFF							
		ON							
ADVERTISE SOUND	OFF		OFF						
	ON		ON						
	3			OFF	OFF				
	4			ON	OFF				
	5			OFF	ON				
INITIAL SHIPS	2			ON	ON				
	600000					OFF	OFF		
	500000					ON	OFF		
	800000					OFF	ON		
	NO BONUS					ON	ON		
BONUS SHIP	NORMAL							OFF	OFF
	EASY							ON	OFF
	HARD							ON	OFF
	HARDEST							ON	ON
	GAME DIFFICULTY							ON	ON



MONITOR  
VERTICAL

COMPONENT SIDE		PIN ASSIGNMENT		SOLDER SIDE	
GND	1	A	GND	1	A
GND	2	B	GND	2	B
+5V	3	C	+5V	3	C
+5V	4	D	+5V	4	D
+12V	5	E	+12V	5	E
COIN METER 1 (NOT USED)	6	F	COIN METER 2 (NOT USED)	6	F
1P S. ATTACK	7	H	2P S. ATTACK	7	H
1P SHOT	8	J	2P SHOT	8	J
1P F. CHANGE (NOT USED)	9	K	2P F. CHANGE (NOT USED)	9	K
1P DOWN	10	L	2P DOWN	10	L
1P UP	11	M	2P UP	11	M
1P RIGHT	12	N	2P RIGHT	12	N
1P LEFT (NOT USED)	13	P	2P LEFT (NOT USED)	13	P
(NOT USED)	14	R	(NOT USED)	14	R
(NOT USED)	15	S	(NOT USED)	15	S
(NOT USED)	16	T	(NOT USED)	16	T
(NOT USED)	17	U	(NOT USED)	17	U
(NOT USED)	18	V	(NOT USED)	18	V
(NOT USED)	19	W	(NOT USED)	19	W
COIN 1	20	X	1P START	20	X
COIN 2	21	Y	2P START	21	Y
TEST	22	Z	(NOT USED)	22	Z
SERVICE	23	a	(NOT USED)	23	a
SPEAKER (+)	24	b	(NOT USED)	24	b
RED	25	c	SPEAKER (-)	25	c
BLUE	26	d	GREEN	26	d
GND	27	e	CMP. SYNC	27	e
GND	28	f	GND	28	f

56P P : 3.96mm



S. ATTACK: SPECIAL ATTACK  
F. CHANGE: FORMATION CHANGE

**421-7339**

## 14. PARTS LIST

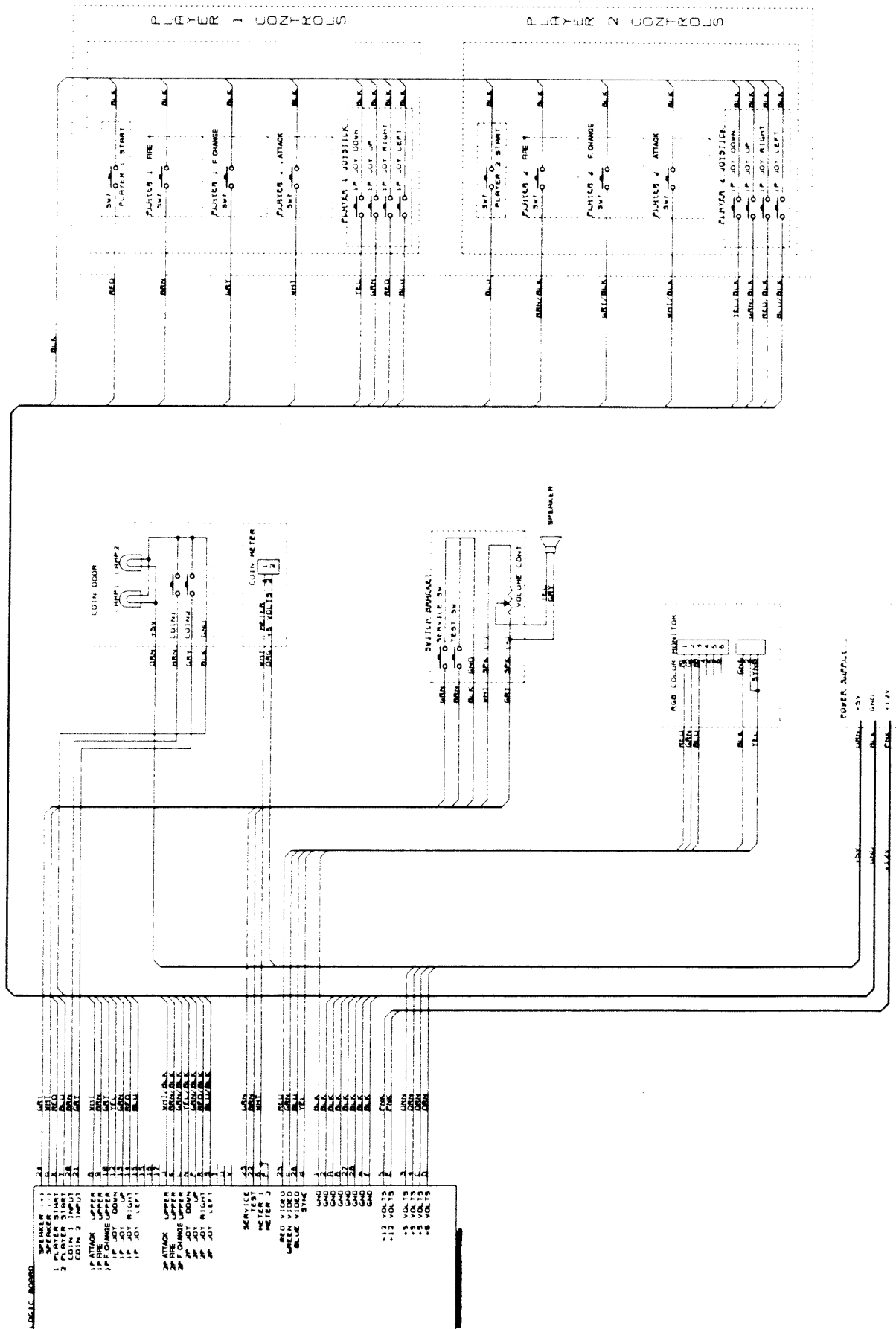
### SEGA SUPPLIED COMPONENTS

PART NUMBER	DESCRIPTION	QTY
117-5123	NAME PLATE	1
2001-5125-24	MONITOR, 26" MID RES	1
4201-0004	MANUAL, SCRAMBLE SPIRITS	1
421-5800-86	ORIGINAL SEAL, SCRAMBLE SPIRITS	1
421-6594	SERIAL NO. STICKER	1
4211-7228	STICKER, SWITCH UNIT	1
4231-0015	MARQUEE, SCRAMBLE SPIRITS	1
4231-0016	MONITOR BEZEL	1
4231-0017	CONTROL INSERT, SCRAMBLE	1
4231-0018	DECAL, LEFT SIDE SCRAMBLE	1
4231-0019	DECAL, RIGHT SIDE SCRAMBLE	1
4231-0020	INSTR. STICKER LEFT, SCRAMBLE	1
4231-0021	INSTR. STICKER RIGHT, SCRAMBLE	1
4750-0049	RHEOSTAT, 100 OHM 10W	1
5090-5028	SWITCH, PB MOM.	2
5091-0001	JOY STICK 8 WAY (SPRING TYPE)	2
5091-0005-01	PB, RED (MS)	2
5091-0005-02	PB, WHITE (MS)	2
5091-0005-04	PB, YELLOW (MS)	4
6010-0043	KNOB, 1/8" SHAFT	1
610-0198	ASSY, FDD UNIT	1
834-6570	GAME PCB, SYSTEM 24	1
DC3-5000-02C	GAME SOFTWARE, SCRAMBLE	1
HL-4202	FDD BASE	1
HL-4203	FDD COVER	1
HL-4204	FDD LID	1
HL-4205	SASH RUBBER 110	1
HL1-4101	SHIELD CASE	1
HL1-4102	SHIELD LID	1
UP1-0008	SERVICE SWITCH BRKT	1

### DYNAMO SUPPLIED COMPONENTS

PART NUMBER	DESCRIPTION	QTY
XA800001300	COVER, SPEAKER	1
XA801500100	PANEL, CONTROL HS5	1
XA801500200	BRACKET, MARQUEE	1
XA880000100	SOCKET, LAMP DBL #22253	1
XA880000201	POWER SUPPLY 5V 11A, 12V 2A	1
XA880000301	HOLDER, FUSE #S-8202-2	1
XA880000401	FILTER, EMI AC LINE	1
XA880000501	FUSE, 7 AMP 250V #312007	1
XA880000600	SPEAKER, 5" 8 OHMS	1
XA880001100	HOUSING, COIN (10-1397-09)	1
XA880001800	BULB, LIGHT 40W CLEAR #04111	2
XA880002200	ISOLATION TRANSFORMER	1
XA890001500	LEVELER, LEG (331517)	4
XA911500100	GLASS, TEMP NM 1/4X25.75X25.75	1
XA990001400	ASSY, POWER CORD	1

## 15. SCHEMATIC DIAGRAM



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